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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,717	07/23/2003	Mark A. Toffle	STL10953	8127

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EXAMINER	
MILLER, BRIAN E	

ART UNIT	PAPER NUMBER
2652	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/625,717	TOFFLE ET AL.	
	Examiner	Art Unit	
	Brian E. Miller	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-21 is/are rejected.

7)☒ Claim(s) 17 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1-21 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frees (US 6,178,059) in view of Watanabe et al (US 6,674,189). (As per claims 1 & 21) Frees discloses a servo track writer assembly for recording servo pattern information on a disc, as shown in FIGs. 1 & 2, the assembly comprising: a spindle assembly 4 having a hub 6 supporting the disc 2 and a spindle motor 4 for rotating the hub 6; an actuator assembly 12 having an actuator arm 14 supported by an actuator bearing (not shown but at least inherent to the structure) for positioning the actuator arm 14 relative to the disc 2; and a servo recording head 8 supported by the actuator arm 14 relative to the disc 2 to record the servo pattern information on the disc as the spindle motor rotates the disc and the actuator bearing positions the actuator arm (see col. 3, lines 31-39). While Frees discloses a STW (servo track writing) procedure to be performed in a helium atmosphere (see col. 3, lines 31-32), the actual bearings of the spindle and actuator motor are not

shown such that "at least one of the spindle motor and the actuator bearing comprises a gas-lubricated bearing with a working fluid comprising helium" is not expressly disclosed.

Watanabe et al, however, discloses a spindle motor apparatus (FIG. 2), which includes injecting helium (via port 28) into the spindle structure which then subsequently is provided into the bearings 3a, 3b, 4, (see col. 4, lines 6-14) to thereby reduce motor power, as well as vibration and noise of the motor. From this teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a helium gas to the bearings of Frees as taught by Watanabe et al. While the spindle motor of Watanabe et al is somewhat different than a disk drive motor and/or an actuator motor, e.g., higher velocity, it would have been within one having ordinary skill in the motor art to have realized the advantages of using helium in any bearing assembly including those of Frees.

The motivation would have been: as taught by Watanabe et al, using helium within a bearing motor assembly reduces vibration, noise and motor power consumption, thus prolonging the motor (see col. 4, lines 41-57).

The above description follows for the limitations of claim 2, such that the spindle motor comprises the gas-lubricated bearing with the working fluid comprising helium; and claim 3, wherein the actuator bearing comprises the gas-lubricated bearing with the working fluid comprising helium; and claim 4 wherein: the spindle motor comprises the gas-lubricated bearing with the working fluid comprising helium and the actuator bearing comprises a further gas-lubricated bearing with a working fluid comprising helium.

As per claim 5, Frees in view of Watanabe et al are considered to teach that the gas-lubricated bearing comprises a hydrostatic (or hydrodynamic-re claim 7) bearing comprising a gap (shown

but unnumbered in Watanabe et al) between opposing bearing surfaces in the bearing, e.g., inner and outer races as typically known in the art, and a gas inlet 28 and a gas outlet 29, which are coupled to the gap(s) (as shown in FIG. 1).

As per claim 6, Watanabe et al further shows a helium gas source 30 coupled to the gas inlet 28 through a pressure regulator 31; and a helium gas recovery tank 35 coupled to the gas outlet 29, which would be considered typical to most helium provided systems (see col. 3, line 56 to col. 4, line 5.

As per claim 10, Frees is considered to show the servo track writer assembly wherein the spindle motor is mounted within a disc drive in which the disc is installed.

While claims 11-16, 20 are method claims, the description of the structure and teachings of Frees in view of Watanabe et al, as set forth above, are considered to encompass this method as well.

With respect to claims 8 & 18, as Frees discloses advantageous results with helium at greater than 60%, one having ordinary skill would have arrived at the claimed "at least 70% helium by volume" through routine engineering optimization and experimentation, lacking criticality and any unobvious or unexpected results. Additionally, the law is replete with cases in which the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Further, with respect to claims 9 & 19 and the STW being a dedicated servo writer, i.e., separate from the disk drive, Official Notice is taken that dedicated servo track writing assemblies are notoriously old and well known in this art, and utilizing one to write servo to the discs of Frees would have been readily provided for. Dedicated servo writers are conventional and are also known to provide highly accurate servo writings. Using one or the other type STW would have been routinely chosen, depending on the disk drive.

Allowable Subject Matter

4. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure including US Patent to Hirano et al (6,144,178), which uses helium internal to a disk drive for its favorable characteristics; US Patent to Bhushan (4,227,756) uses a gas bearing including helium.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (571) 272-7578. The examiner can normally be reached on M-TH 7:15am-4:45pm (and every other friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian E. Miller
Primary Examiner
Art Unit 2652

BEM
September 28, 2005